PSc 320 S15 Self Energy Audit
Due at the beginning of class, Tuesday, May 5. But let's do it ASAP

You have received a power measurement device. You plug it into the wall and plug any (EVERY) electrical device into it. It will read the power that this device is using at any moment.

a) You are to measure the power output of every electrical device that you can get your hands on (at least 10 devices). Measure the power when the device is on, and when it is "off". If it is something you can turn up, like a stereo, measure it with loud and soft music. Some things cycle on and off like a refrigerator, so you may have to wait a while to get a measurement with it on.
b) What do you observe when you measure the microwave oven on different power settings?
c) Measure your laptop (or someone else's) when the battery is low, when the battery is partially full, when the battery is full, when the battery is pulled out of the computer, but the computer is running.
d) For light bulbs in your house, read the wattage of each and record this amount. For at least one, find out how accurate the printed wattage is by using a lamp that you can plug into the power meter. You may need to move the light bulb to a different lamp to plug it in.
e) The electrical power that the device "consumes" is (exactly) equal to the power the device gives off. We can estimate this power, which can take the form of radiated light, heat, sound, increased potential energy, etc. Make a table on Excel listing each device. Please make a note of what form(s) of energy is given off, in order of greatest amount of energy to lowest amount of energy.
f) Make an estimate of hours per day of use and the duty cycle (what portion of time each device is consuming power. For example, a refrigerator cycles on and off to maintain a constant internal temperature.
g) Estimate the total energy consumption in your home for a month, put answer in kWh.
h) Estimate what the monthly electrical bill should be if the price of electricity is $0.15 / kWh. If you actually get a bill, how close is your calculation to your monthly bill?
i) How does your Electricity use compare to the average American (give ratio)? With the average earth human?
j) Which measurements surprised you?
k) What is the easiest way to lower your electrical consumption?:
    a) Through increased efficiency measures?
    b) Through conservation measures?
    c) Do you even *want* to lower your electricity consumption?